

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

sub B1 1. An absorbent composite, comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material.

2. The composite of Claim 1 wherein the bands are continuous along the composite's length in the machine direction.

3. The composite of Claim 1 wherein the bands are substantially parallel.

4. The composite of Claim 1 wherein the bands are discontinuous along the composite's length in the machine direction.

5. The composite of Claim 1 wherein the fibrous matrix comprises fibers selected from the group consisting of resilient fibers, matrix fibers, and mixtures thereof.

6. The composite of Claim 5 wherein the resilient fibers are selected from the group consisting of chemically stiffened fibers, anfractuous fibers, chemithermomechanical pulp fibers, prehydrolyzed kraft pulp fibers, synthetic fibers, and mixtures thereof.

7. The composite of Claim 6 wherein the chemically stiffened fibers comprise crosslinked cellulosic fibers.

8. The composite of Claim 7 wherein the crosslinked cellulosic fibers are crosslinked with a crosslinking agent selected from the group consisting of urea-based and polycarboxylic acid crosslinking agents.

9. The composite of Claim 6 wherein the synthetic fibers are selected from the group consisting of polyolefin, polyester, polyamide, and thermobondable bicomponent fibers.

10. The composite of Claim 9 wherein the polyester fibers are polyethylene terephthalate fibers.

11. The composite of Claim 5 wherein the matrix fibers comprise cellulosic fibers.

12. The composite of Claim 11 wherein the cellulosic fibers comprise fibers selected from the group consisting of wood pulp fibers, cotton linters, cotton fibers, hemp fibers, and mixtures thereof.

13. The composite of Claim 5 wherein the resilient fibers are present in the base in an amount from about 10 to about 60 percent by weight of the total composite.

14. The composite of Claim 5 wherein the matrix fibers are present in the base in an amount from about 10 to about 50 percent by weight of the total composite.

15. The composite of Claim 1 wherein the absorbent material is a superabsorbent material.

16. The composite of Claim 15 wherein the superabsorbent material is selected from the group consisting of superabsorbent particles and superabsorbent fibers.

17. The composite of Claim 1 wherein the absorbent material is present in an amount from about 0.1 to about 80 percent by weight of the total composite.

18. The composite of Claim 1 wherein the absorbent material is present in about 40 percent by weight of the total composite. *B1*

19. The composite of Claim 1 wherein the absorbent material absorbs from about 5 to about 100 times its weight in 0.9 percent saline solution.

20. The composite of Claim 1 further comprising a wet strength agent.

21. The composite of Claim 20 wherein the wet strength agent is a resin selected from the group consisting of polyamide-epichlorohydrin and polyacrylamide resins.

22. The composite of Claim 20 wherein the wet strength agent is present in the composite in an amount from about 0.01 to about 2 percent by weight of the total composite.

23. The composite of Claim 20 wherein the wet strength agent is present in the composite in about 0.25 percent by weight of the total composite.

24. The composite of Claim 1 having a basis weight of from about 50 to about 1000 g/m².

25. The composite of Claim 1 having a density of from about 0.02 to about 0.7 g/cm³.

26. The composite of Claim 1 wherein the one or more fibrous bands comprise fibers selected from the group consisting of resilient fibers, matrix fibers, and mixtures thereof.

27. The composite of Claim 26 wherein the resilient fibers are selected from the group consisting of chemically stiffened fibers, anfractuous fibers, chemithermomechanical pulp fibers, prehydrolyzed kraft pulp fibers, synthetic fibers, and mixtures thereof.

28. The composite of Claim 27 wherein the chemically stiffened fibers comprise crosslinked cellulosic fibers.

29. The composite of Claim 28 wherein the crosslinked cellulosic fibers are crosslinked with a crosslinking agent selected from the group consisting of urea-based and polycarboxylic acid crosslinking agents.

B1
D095624-02600
30. The composite of Claim 26 wherein the matrix fibers comprise cellulosic fibers.

31. The composite of Claim 30 wherein the cellulosic fibers comprise fibers selected from the group consisting of wood pulp fibers, cotton linters, cotton fibers, hemp fibers, and mixtures thereof.

32. The composite of Claim 30 wherein the cellulosic fibers comprise fluff pulp fibers.

33. The composite of Claim 30 wherein the cellulosic fibers comprise refined pulp fibers.

34. The composite of Claim 26 wherein the resilient fibers are present in the composite in an amount from about 15 to about 90 percent by weight of the total composite.

35. The composite of Claim 26 wherein the matrix fibers are present in the composite in an amount from about 10 to about 85 percent by weight of the total composite.

36. A wetlaid absorbent composite, comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material.

37. A foam-formed absorbent composite, comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material.

Sub
B1
38. An absorbent article comprising an absorbent composite comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material.

39. An absorbent article comprising a wetlaid absorbent composite comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material.

40. An absorbent article comprising a foam-formed absorbent composite comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material.

41. An absorbent article comprising:

liquid pervious facing sheet;

a storage layer comprising an absorbent composite comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material; and

a liquid impervious backing sheet.

42. An absorbent article comprising:

a liquid pervious facing sheet;

an acquisition layer for rapidly acquiring and distributing liquid;

a storage layer comprising an absorbent composite comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material; and

a liquid impervious backing sheet.

43. An absorbent article comprising:

a liquid pervious facing sheet;

an acquisition layer for rapidly acquiring and distributing liquid;

a storage layer comprising an absorbent composite comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material;

an intermediate layer interposed between the acquisition layer and the storage layer; and

a liquid impervious backing sheet.

44. The absorbent article of Claim 43 wherein the intermediate layer is selected from the group consisting of a liquid pervious tissue and a distribution layer.

45. The absorbent article of Claim 41 wherein the article is a feminine care product.

46. The absorbent article of Claim 45 wherein the top sheet is joined to the backing sheet.

47. The absorbent article of Claim 42 wherein the article is a diaper.

48. The absorbent article of Claim 47 further comprising leg gathers.

49. An absorbent article comprising:

a liquid pervious facing sheet;

an acquisition layer for acquiring and distributing liquid;

a storage layer; and

a liquid impervious backing sheet;

wherein the acquisition layer comprises an absorbent composite comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material.

50. The absorbent article of Claim 49 wherein the acquisition layer has a top surface area less than the top surface area of the storage core.

51. The absorbent article of Claim 49 wherein the acquisition layer has a top surface area about equal to the top surface area of the storage core.

52. The absorbent article of Claim 49 wherein the storage layer comprises absorbent material.

53. The absorbent article of Claim 49 wherein the storage layer comprises an absorbent composite comprising one or more fibrous bands in a fibrous base, wherein the base comprises a fibrous matrix and absorbent material, and wherein the bands are substantially free of absorbent material.

54. The absorbent article of Claim 49 wherein the article is a diaper.

55. The absorbent article of Claim 49 further comprising leg gathers.

56. A method for forming a fibrous web, comprising the steps of:

(a) forming a first slurry comprising fibers in an aqueous dispersion medium;

(b) forming a second slurry comprising fibers in an aqueous dispersion medium;

(c) moving a first foraminous element in a first path;

(d) moving a second foraminous element in a second path, a nip area provided at a location along the first and second paths;

(e) passing the first slurry into contact with the first foraminous element moving in the first path;

(f) passing the second slurry into contact with the second foraminous element moving in the second path;

(g) passing a third material between the first and second slurries, wherein the third material does not contact the foraminous elements, and wherein the third material is introduced at a plurality of points; and

(h) withdrawing liquid from the first and second slurries and third material through the first and second foraminous elements, respectively, to provide a fibrous web.

57. The method of Claim 56 wherein the step of passing a third material between the first and second slurries by introducing the third material at a plurality of points provides bands of the third material into the web formed.

58. The method of Claim 57 wherein the step of passing a third material between the first and second slurries by introducing the third material at a plurality of points comprises adjusting the positions of at least some of the plurality of points to adjust the introduction points in a first dimension toward and away from the nip area.

59. The method of Claim 57 wherein the step of passing a third material between the first and second slurries by introducing the third material at a plurality of points comprises adjusting the positions of at least some of the plurality of points to adjust the introduction points in a second dimension substantially perpendicular to the first dimension, closer to one foraminous element or the other.

60. The method of Claim 57 wherein the step of passing a third material between the first and second slurries by introducing the third material at a plurality of points is practiced utilizing a plurality of conduits.

61. The method of Claim 60 wherein the plurality of conduits comprises conduits having at least two different lengths.

62. The method of Claim 60 wherein steps (e), (f), and (g) are practiced by providing dividing walls extending part of the length of the conduits toward the nip area.

63. The method of Claim 56 wherein the step of passing a third material between the first and second slurries step comprises passing the third material between the first and second slurries after the first and second slurries have contacted the first and second foraminous elements, respectively, and withdrawing liquid therefrom.

64. The method of Claim 56 wherein the fibers are selected from the group consisting of resilient fibers, matrix fibers, synthetic fibers, and mixtures thereof.

65. The method of Claim 56 wherein the fibers comprise crosslinked cellulosic fibers and wood pulp fibers.

66. The method of Claim 56 wherein the third material comprises a fibrous slurry.

67. The method of Claim 56 wherein the first slurry is different from the second slurry.

68. The method of Claim 56 wherein the first and second paths are substantially vertical.

69. The method of Claim 56 practiced with a twin-wire former.

70. The method of Claim 69 wherein the twin-wire former is a vertical downflow former.

71. The method of Claim 56 further comprising the step of drying the wet composite to provide an absorbent composite.

72. The method of Claim 56 wherein the method is a wetlaid method.

73. The method of Claim 56 wherein the method is a foam-forming method.